REMARKS

Applicants submit a Petition and Fee for a Three-Month Extension of Time, along with a Request for Continued Examination.

Claims 1-21 are all the claims presently pending in the application. The specification and claims 1, 3, 5-7, 10-11, and 16-17 are amended to more clearly define the invention. Claims 1, 10, and 16 are independent.

These amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Support for the amendments to claim 1 is found in the specification at, for example, page 9, lines 19-23 and page 10, lines 22-23).

Applicants also note that, notwithstanding any claim amendments herein or later during prosecution, Applicants' intent is to encompass equivalents of all claim elements.

Entry of this §1.116 Amendment is proper. Since the Amendments above narrow the issues for appeal and since such features and their distinctions over the prior art of record were discussed earlier, such amendments do not raise a new issue requiring a further search and/or consideration by the Examiner. As such, entry of this Amendment is believed proper and Applicants earnestly solicit entry. No new matter has been added.

Claims 1-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Kashio et al. reference.

This rejection is respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary embodiment of the claimed invention, as defined by, for example, independent claim 1, is directed to a one-way clutch that includes an outer ring fitting member with a hole, in which a recess portion is formed at an inner peripheral face of the hole, a shaft passed through the hole of the outer ring fitting member, a thin plate forming a shell-type annular outer ring with a plurality of cam faces on an inner peripheral face thereof, which is fitted into the hole of the outer ring fitting member and through which the shaft is passed, a plurality of rollers arranged between the shaft and the annular outer ring so as to correspond to the plurality of cam faces, respectively, and an annular retainer for retaining the plurality of rollers fitted to the outer ring. The retainer includes an axially projected portion projected from the outer ring in an axial direction thereof, and a projection projected from the axially projected portion in a radial direction of thereof, which is fitted to the recess portion of the outer ring fitting member to prevent the retainer from rotating with respect to the outer ring fitting member.

As explained by the present specification at, for example, page 3, line 6 through page 4, line 11, and as illustrated by Figures 5-7, conventional one-way clutches have a problem in that when a shaft 53 is rotated in an idling direction (F) a roller 52 pushes against a retainer and may cause the retainer to rotate within the outer ring 51 (as shown in Fig. 6). Then, when the shaft 53 rotates in the opposite, locking direction (L), the roller 52 is stopped by the shifted retainer 43 before the roller 52 may move into a locking position through engagement with a cam surface 51b of the outer ring 51 (as shown in Fig. 7). Therefore, these conventional one-way clutches have difficulty in reliably obtaining a locking action.

In stark contrast, the present invention provides a structure that prevents the retainer

from rotating relative to the outer ring. Thus, since the retainer is prevented from rotating, the rollers will reliably engage the cam surface of the outer ring to lock the clutch.

II. THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTION

The Examiner alleges that claims 6-7 are indefinite. While Applicants submit that such would be clear to one of ordinary skill in the art to allow them to know the metes and bounds of the invention, taking the present Application as a whole, to speed prosecution claims 6-7 have been amended in accordance with Examiner Bonck's very helpful suggestions.

In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

III. THE PRIOR ART REJECTION

The Examiner alleges that the Kashio et al. reference teaches the claimed invention. Applicants submit, however, that there are elements of the claimed invention which are neither taught nor suggested by the Kashio et al. reference.

An exemplary feature of the present invention is to prevent an outer ring from rotating with respect to the retainer, the outer ring being of a shell type formed by bending a thin plate. The problem discussed in the background of the specification (especially on, for example, page 3) is specific to the shell type outer ring that is formed from a thin plate.

In stark contrast, the Kashio et al. reference discloses an outer ring that is not made from a thin plate and a cam face has a large depth since the material is radially thick.

Further, a thickness in a radial direction for an engagement between the outer ring and

the retainer is sufficiently large and, thus, the outer ring does not move relative to the retainer even if a large radial load is placed upon the one-way clutch in idly rotating the one-way clutch. Thus, the clutch that is disclosed by the Kashio et al. reference does not suffer from the problem solved by the present invention.

Moreover, the Kashio et al. reference does not teach or suggest the features of the claimed invention including a thin plate forming the outer ring as recited by independent claims 1, 10, and 16. This feature is important for permitting the provision of a cam face on an inner face and an expanded portion on an outer peripheral side by expanding the thin plate of the outer ring. (Page 9, line 9 - page 10, line 5).

Rather, the one-way clutch that is disclosed by the Kashio et al. reference includes an outer ring 1 that "is made of a ferrous porous metal" that is "formed in its inner periphery with a plurality of axial grooves 5" (col. 2, lines 53-55) and that also includes "a plurality of rather shallow axial grooves 10" (col. 2, lines 61-63).

Clearly, the features of the outer ring 1 of the Kashio et al. reference are not formed from a thin plate. Rather, the outer ring 1 of the Kashio et al. reference is molded from a ferrous porous metal shaped to include axial grooves 5 and 10. Typically, such ferrous porous metal shapes are formed by compressing a ferrous metal powder in a die.

In stark contrast, the claimed invention includes a thin plate forming the outer ring. In this manner, the thin plate may be easily expanded to simultaneously form both the features of the cam faces and the expanded portions.

The Kashio et al. reference does not teach or suggest a thin plate forming the outer ring.

Therefore, the Kashio et al. reference does not teach or suggest each and every

element of the claimed invention and the Examiner is respectfully requested to withdraw this rejection of claims 1-21.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-21, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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